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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/710,907      | 08/12/2004  | Andre Yu             | 13418-US-PA         | 4906             |

31561 7590 02/09/2007  
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

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| EXAMINER |
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BECK, ALEXANDER S

|          |              |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2629

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 02/09/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                                      |                                  |  |
|------------------------------|--------------------------------------|----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/710,907 | <b>Applicant(s)</b><br>YU ET AL. |  |
|                              | <b>Examiner</b><br>Alexander S. Beck | <b>Art Unit</b><br>2629          |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-12 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 2-6 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2629

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1,7,10 and 11** are rejected under 35 U.S.C. 102(b) as being anticipated by Abe et al. (U.S. Patent No. 5,705,879, hereinafter ABE).

As to independent **Claim 1**, ABE teaches/suggests a liquid crystal display lighting control system in **Figure 9**, comprising: a lamp (20); a self-oscillation inverter (16,18), coupled to a power source (12) and the lamp (20), for converting electrical energy from the power source (12) to the lamp, the self-oscillation inverter (16,18) operating with a self-oscillation frequency; a sampling-frequency generating circuit (16,18), coupled to the self-oscillation inverter (16,18), for sampling and measuring the self-oscillation frequency for outputting a synchronization frequency; a detecting-feedback circuit (22,26), coupled to the lamp (20), for detecting a current flowing through the lamp (20) and perform feedback operation and outputting a feedback signal; and a modulator (26,28), coupled to the detecting-feedback circuit (22,26), the sampling-frequency generating circuit (16,18) and the self-oscillation circuit (16,18),

Art Unit: 2629

for receiving and measuring the feedback signal and the synchronization frequency for outputting a controlling synchronized with the self-oscillation frequency (ABE: col. 10, ln. 55 – col. 11, ln. 26).

As to **Claim 7**, ABE teaches/suggests wherein the detecting-feedback circuit (22,26) comprises: a detecting circuit (22), coupled to the lamp (20), for detecting the current flowing through the lamp (20) and outputting a detecting signal; and a feedback compensation circuit (26), coupled to the detecting circuit (22) and the modulator (26,28), for measuring the detecting signal for outputting the feedback signal (ABE: col. 6, ln. 21-33; col. 10, ln. 55 – col. 11, ln. 26).

As to **Claim 10**, ABE teaches/suggests wherein the self-oscillation inverter (16,18) is a DC/AC inverter (e.g. elements 16 and 18 convert a DC power supply voltage, as is found in portable electronics devices such as a notebook personal computer, into an AC voltage signal to be received by discharge tube 20 for illumination of the portable electronics device).

As to **Claim 11**, ABE teaches/suggests wherein the synchronization frequency is single, double, triple, or multiple of the self-oscillation frequency (ABE: col. 10, ln. 55 – col. 11, ln. 26).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

Art Unit: 2629

owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 8,9,12 and 14-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (U.S. Patent No. 5,705,879) in view of Lin et al. (U.S. Patent No. 7,057,611 B2, hereinafter LIN).

As to independent **Claim 12**, most of the claim limitations have already been discussed and met by ABE, as detailed in the above paragraphs with respect to independent Claim 1, with the exception of: a buck circuit, coupled to the modulator, the self-oscillation inverter and the power source.

ABE does not disclose expressly a buck circuit coupled to the modulator, the self-oscillation inverter and the power source.

LIN, analogous in art with ABE, teaches/suggests a power supply for an liquid crystal display panel comprising a DC/DC buck converter circuit (LIN: col. 2, ln. 26 – col. 3, ln. 24).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of ABE such that the liquid crystal display lighting control system comprised a DC/DC buck circuit, as taught/suggested by LIN, by connecting a DC power source to the self-oscillation inverter via the DC/DC buck circuit. As such, the buck circuit would be coupled to the modulator, the self-oscillation inverter and the power source.

The suggestion/motivation for doing so would have been because, as is well known in the art, DC/DC buck converters are an extremely efficient power supply that are self-regulating, making it ideal for portable electronics devices.

As to **Claims 8,9 and 15**, all of the claim limitations have already been discussed and met by ABE and LIN, as detailed in the above paragraphs with respect to independent Claim 12.

As to **Claims 14,16 and 17**, all of the claim limitations have already been discussed and met by ABE, as detailed in the above paragraphs with respect to Claims 7,10 and 11.

***Allowable Subject Matter***

6. **Claims 2-6 and 13** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

As to **Claim 2**, none of the prior art made of record teaches or suggests wherein the sampling-frequency generating circuit samples at a preset sampling location in the self-oscillation circuit.

As to **Claims 6 and 13**, none of the prior art made of record teaches or suggests wherein the sampling-frequency generating circuit comprises: a sampling circuit, coupled to the self-oscillation circuit, for sampling the self-oscillation frequency; and a frequency-generating circuit, coupled to the sampling circuit and the modulator, for outputting the synchronization frequency after measuring the self-oscillation frequency.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kumasaka et al. (U.S. Patent No. 6,118,221) discloses a cold-cathode tube lighting circuit with protection circuit for piezoelectric transformer.

Art Unit: 2629

Vazquez Carazo et al. (U.S. Patent No. 6,617,757 B2) discloses an electro-luminescent backlighting circuit with multilayer piezoelectric transformer.

Takaoka et al. (U.S. Patent No. 6,822,633 B2) discloses a liquid crystal display lighting system.

Fukumoto (U.S. Patent No. 6,982,886 B2) discloses a DC-AC converter parallel operation system and controller.

Min et al. (U.S. Publication No. 2004/0056825 A1) discloses an inverter for liquid crystal display.

Takahashi et al. (U.S. Publication No. 2004/0135523 A1) discloses an electrodeless discharge lamp lighting device, light bulb type electrodeless fluorescent lamp and discharge lamp lighting device.

Lee et al. (U.S. Publication No. 2004/0145584 A1) discloses an apparatus for supplying power and liquid crystal display having the same.

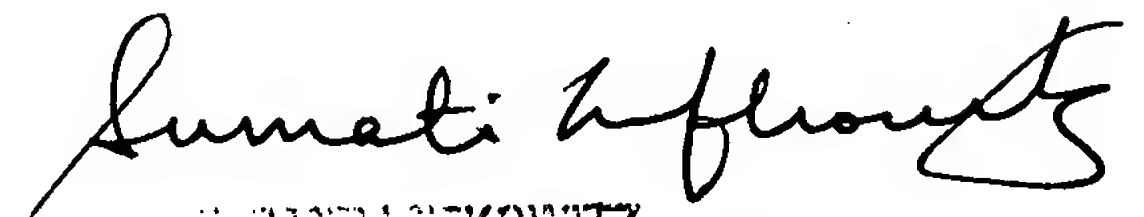
Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Alexander S. Beck** whose telephone number is **(571) 272-7765**. The examiner can normally be reached on M-F, 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Sumati Lefkowitz** can be reached on **(571) 272-3638**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

asb  
1/31/07

  
SUMATI LAKSHMINARAYANA  
PATENT EXAMINER